SUBJECT INDEX

Advanced Materials & Processes

January-June 1995, Vol. 147, No. 1-6

In the index listing for each article, the first number is the issue number; the second, the page in that issue. Issue numbers are: 1, January; 2, February; 3, March; 4, April; 5, May; 6, June. Note: Materials Progress news stories and *ASM News* articles are not indexed.

AEROSPACE
Alloys for Aerospace 4-23
Inside an Aerospace Testing Facility 2-23
Single-Crystal Superalloy
Drives Turbine Advances 4-39
Special Metals Manufactures
Large-Diameter Reforging Billet 1-64
XD Titanium Aluminide Composites 4-35

AUTOMOTIVE
Advanced Copper/Brass Radiator 5-33
Armco Designs
Stainless Steel Auto Exhaust Systems 1-43
Automotive Materials at the SAE Show 5-22
Ceramics Shape Up
for Heat Engine Applications 1-21
High-Aluminum Ferritic Stainless Alloys
Synthesized for Catalytic Converters 1-27
Materials Selection 6-19

CERAMICS
Ceramics Shape Up
for Heat Engine Applications 1-21
Fullerene Materials 4-29
Joining Advanced Materials 2-47

COMPOSITES
Dispersion-Strengthened
Copper-Niobium Composites 6-35
XD Titanium Aluminide Composites 4-35

COMPUTER APPLICATIONS
Process Simulation Integrates
Lifecycle Elements 1-23

CONFERENCE/SHOW PREVIEWS
Plenty to See and Learn
at AWS Welding Expo '95 3-21

COPPER ALLOYS
Advanced Copper/Brass Radiator 5-33
Dispersion-Strengthened
Copper-Niobium Composites 6-35
Electralloy Fabricates 50,000-lb Ingot
of Nickel Aluminum Bronze 1-52

CORROSION
Nickel-Base Alloys Combat Corrosion 6-25

EDITORIALS
Choice Automotive Materials 5-2
Critical Aeroengine Alloys 4-4
Critical Points 1-32C, 3-40C, 5-40C
Materials With Character 2-2
People of Earth 1-2
Welding Progress 3-2

ENGINEERING MANAGEMENT
Inside an Aerospace Testing Facility 2-23
Life Cycle Analysis/Assessment 2-37
Materials Compete in Recycling Initiatives ... 1-25
Process Simulation
Integrates Lifecycle Elements 1-23
Steel Service Centers:
Partnering for Profitability 1-68

FERROUS METALS
AL Tech Specialty Steel
Extrudes Special Shapes 1-42
Allegheny Ludlum Develops
Superferritic Stainless Steels 1-41
Armco Designs Stainless Steel
Auto Exhaust Systems 1-43
Automotive Materials at the SAE Show 5-22
Avesta Sheffield's New Austenitic Grade
Resists Chlorine Dioxide 1-44
Bundle-Drawn Metal Fibers 6-33
Carpenter Technology's
SCQ Alloys Improve Performance 1-45
High-Aluminum Ferritic Stainless Alloys
Synthesized for Catalytic Converters 1-27
J&L Stainless Sheet Remodels Building 1-54
Materials Selection 6-19
Precision Specialty Metals
Produces Flattest Stainless Steel 1-55
Residual Copper Trends for Steels 6-39
Specialty Steel Industry of North America 1-34
Steel Service Centers:
Partnering for Profitability 1-68
Washington Steel Introduces
Dual-Phase Alloy 1-66

FORECASTS
[Heat Treating] Forecast '95 ..... 1-32U

HEAT PROCESSING
Atmospheres for the Hardening of Steel ... 3-40AA
A Car-Bottom/Bell Furnace 5-40CC
Forecast '95 ..... 1-32U
Innovative Applications of
Induction Heat Treating 5-40S
Microstructure and Performance
of Carburized Steel, Part I: Martensite 5-40Y
Simple Heat Treatments to Produce
Ferrite and Pearlite, Part I:
Full Annealing & Normalizing 3-40GG
Today's Furnace Technology 3-40M

INTERMETALLIC MATERIALS
Alloys for Aerospace 4-23
Joining Advanced Materials 2-47
Monte Carlo Simulations
of Intermetallic Compounds 2-51
XD Titanium Aluminide Composites 4-35

JOINING
Bolting Alloy Fills High-Temperature Gap ... 2-33
Explosive Welding: Principles and Potentials . 3-37
The History of Arc Welding 3-33
Joining Advanced Materials 2-47
Plenty to See and Learn
at AWS Welding Expo '95 3-21
Welding Processes for Plastics 3-27

MATERIALS SELECTION
Aurum Thermoplastic Polyimides 5-37
Materials Compete in Recycling Initiatives ... 1-25
Polyamide-Imide:
Plastic That Can Take the Heat 1-19
Polycarbonate: High-Performance Resin 2-43
Polyethersulfone:
High-Temperature Performer 4-47

MELTING/CASTING/MOLDING
Exo-Melt: A Commercially Viable Process 6-29
Ohno Continuous Casting 4-43

METALLOGRAPHY/MICROSCOPY
Analytical Electron Microscopy
Wins 1994 Jacquet-Lucas Award 2-28
ASM/IMS Photomicrography Competition ... 2-30
Monte Carlo Simulations
of Intermetallic Compounds 2-51

METALS PRODUCTION
Ohno Continuous Casting 4-43
Teledyne Allvac Spray
Forms Clean Superalloys 1-65

NONFERROUS METALS
Advanced Copper/Brass Radiator 5-33
Alloys for Aerospace 4-23
Automotive Materials at the SAE Show 5-22
Bolting Alloy Fills High-Temperature Gap ... 2-33
Bundle-Drawn Metal Fibers 6-33
Dispersion-Strengthened
Copper-Niobium Composites 6-35
Electralloy Fabricates 50,000-lb Ingot
of Nickel Aluminum Bronze 1-52
Exo-Melt: A Commercially Viable Process 6-29
Inco Designs Corrosion-Resistant Superalloy .. 1-53
Materials Selection 6-19
Nickel-Base Alloys Combat Corrosion 6-25
Ohno Continuous Casting 4-43
Single-Crystal Superalloy
Drives Turbine Advances 4-39
Special Metals Manufactures
Large-Diameter Reforging Billet 1-64
Teledyne Allvac Spray Forms
Clean Superalloys 1-65

PLASTICS
Aurum Thermoplastic Polyimides 5-37
Automotive Materials at the SAE Show 5-22
Materials Selection 6-19

SUBJECT INDEX

Advanced Materials & Processes

January-June 1995, Vol. 147, No. 1-6

In the index listing for each article, the first number is the issue number; the second, the page in that issue. Issue numbers are: 1, January; 2, February; 3, March; 4, April; 5, May; 6, June. Note: Materials Progress news stories and *ASM News* articles are not indexed.

AEROSPACE
Alloys for Aerospace 4-23
Inside an Aerospace Testing Facility 2-23
Single-Crystal Superalloy
Drives Turbine Advances 4-39
Special Metals Manufactures
Large-Diameter Reforging Billet 1-64
XD Titanium Aluminide Composites 4-35

AUTOMOTIVE
Advanced Copper/Brass Radiator 5-33
Armco Designs
Stainless Steel Auto Exhaust Systems 1-43
Automotive Materials at the SAE Show 5-22
Ceramics Shape Up
for Heat Engine Applications 1-21
High-Aluminum Ferritic Stainless Alloys
Synthesized for Catalytic Converters 1-27
Materials Selection 6-19

CERAMICS
Ceramics Shape Up
for Heat Engine Applications 1-21
Fullerene Materials 4-29
Joining Advanced Materials 2-47

COMPOSITES
Dispersion-Strengthened
Copper-Niobium Composites 6-35
XD Titanium Aluminide Composites 4-35

COMPUTER APPLICATIONS
Process Simulation Integrates
Lifecycle Elements 1-23

CONFERENCE/SHOW PREVIEWS
Plenty to See and Learn
at AWS Welding Expo '95 3-21

COPPER ALLOYS
Advanced Copper/Brass Radiator 5-33
Dispersion-Strengthened
Copper-Niobium Composites 6-35
Electralloy Fabricates 50,000-lb Ingot
of Nickel Aluminum Bronze 1-52

CORROSION
Nickel-Base Alloys Combat Corrosion 6-25

EDITORIALS
Choice Automotive Materials 5-2
Critical Aeroengine Alloys 4-4
Critical Points 1-32C, 3-40C, 5-40C
Materials With Character 2-2
People of Earth 1-2
Welding Progress 3-2

ENGINEERING MANAGEMENT
Inside an Aerospace Testing Facility 2-23
Life Cycle Analysis/Assessment 2-37
Materials Compete in Recycling Initiatives ... 1-25
Process Simulation
Integrates Lifecycle Elements 1-23
Steel Service Centers:
Partnering for Profitability 1-68

FERROUS METALS
AL Tech Specialty Steel
Extrudes Special Shapes 1-42
Allegheny Ludlum Develops
Superferritic Stainless Steels 1-41
Armco Designs Stainless Steel
Auto Exhaust Systems 1-43
Automotive Materials at the SAE Show 5-22
Avesta Sheffield's New Austenitic Grade
Resists Chlorine Dioxide 1-44
Bundle-Drawn Metal Fibers 6-33
Carpenter Technology's
SCQ Alloys Improve Performance 1-45
High-Aluminum Ferritic Stainless Alloys
Synthesized for Catalytic Converters 1-27
J&L Stainless Sheet Remodels Building 1-54
Materials Selection 6-19
Precision Specialty Metals
Produces Flattest Stainless Steel 1-55
Residual Copper Trends for Steels 6-39
Specialty Steel Industry of North America 1-34
Steel Service Centers:
Partnering for Profitability 1-68
Washington Steel Introduces
Dual-Phase Alloy 1-66

FORECASTS
[Heat Treating] Forecast '95 ..... 1-32U

HEAT PROCESSING
Atmospheres for the Hardening of Steel ... 3-40AA
A Car-Bottom/Bell Furnace 5-40CC
Forecast '95 ..... 1-32U
Innovative Applications of
Induction Heat Treating 5-40S
Microstructure and Performance
of Carburized Steel, Part I: Martensite 5-40Y
Simple Heat Treatments to Produce
Ferrite and Pearlite, Part I:
Full Annealing & Normalizing 3-40GG
Today's Furnace Technology 3-40M

INTERMETALLIC MATERIALS
Alloys for Aerospace 4-23
Joining Advanced Materials 2-47
Monte Carlo Simulations
of Intermetallic Compounds 2-51
XD Titanium Aluminide Composites 4-35

JOINING
Bolting Alloy Fills High-Temperature Gap ... 2-33
Explosive Welding: Principles and Potentials . 3-37
The History of Arc Welding 3-33
Joining Advanced Materials 2-47
Plenty to See and Learn
at AWS Welding Expo '95 3-21
Welding Processes for Plastics 3-27

MATERIALS SELECTION
Aurum Thermoplastic Polyimides 5-37
Materials Compete in Recycling Initiatives ... 1-25
Polyamide-Imide:
Plastic That Can Take the Heat 1-19
Polycarbonate: High-Performance Resin 2-43
Polyethersulfone:
High-Temperature Performer 4-47

MELTING/CASTING/MOLDING
Exo-Melt: A Commercially Viable Process 6-29
Ohno Continuous Casting 4-43

METALLOGRAPHY/MICROSCOPY
Analytical Electron Microscopy
Wins 1994 Jacquet-Lucas Award 2-28
ASM/IMS Photomicrography Competition ... 2-30
Monte Carlo Simulations
of Intermetallic Compounds 2-51

METALS PRODUCTION
Ohno Continuous Casting 4-43
Teledyne Allvac Spray
Forms Clean Superalloys 1-65

NONFERROUS METALS
Advanced Copper/Brass Radiator 5-33
Alloys for Aerospace 4-23
Automotive Materials at the SAE Show 5-22
Bolting Alloy Fills High-Temperature Gap ... 2-33
Bundle-Drawn Metal Fibers 6-33
Dispersion-Strengthened
Copper-Niobium Composites 6-35
Electralloy Fabricates 50,000-lb Ingot
of Nickel Aluminum Bronze 1-52
Exo-Melt: A Commercially Viable Process 6-29
Inco Designs Corrosion-Resistant Superalloy .. 1-53
Materials Selection 6-19
Nickel-Base Alloys Combat Corrosion 6-25
Ohno Continuous Casting 4-43
Single-Crystal Superalloy
Drives Turbine Advances 4-39
Special Metals Manufactures
Large-Diameter Reforging Billet 1-64
Teledyne Allvac Spray Forms
Clean Superalloys 1-65

PLASTICS
Aurum Thermoplastic Polyimides 5-37
Automotive Materials at the SAE Show 5-22
Materials Selection 6-19

Polyamide-Imide:
Plastic That Can Take the Heat 1-19
Polycarbonate: High-Performance Resin 2-43
Polyethersulfone:
High-Temperature Performer 4-47
Welding Processes for Plastics 3-27

PROCESS SELECTION
Ion Beams Replace Chrome Plating 5-29
Surface Modification 1-29

REFRACTORY METALS
Alloys for Aerospace 4-23

RESEARCH TOPICS
Analytical Electron Microscopy
Wins 1994 Jacquet-Lucas Award 2-28
Fullerene Materials 4-29
Life Cycle Analysis/Assessment 2-37
Monte Carlo Simulations
of Intermetallic Compounds 2-51
Process Simulation
Integrates Lifecycle Elements 1-23
Residual Copper Trends for Steels 6-39

SPECIAL-DUTY MATERIALS
Bundle-Drawn Metal Fibers 6-33

STAINLESS STEELS
AL Tech Specialty Steel
Extrudes Special Shapes 1-42
Allegheny Ludlum Develops
Superferritic Stainless Steels 1-41
Armco Designs
Stainless Steel Auto Exhaust Systems 1-43
Avesta Sheffield's New Austenitic Grade
Resists Chlorine Dioxide 1-44
Carpenter Technology's
SCQ Alloys Improve Performance 1-45
High-Aluminum Ferritic Stainless Alloys
Synthesized for Catalytic Converters 1-27
J&L Stainless Sheet Remodels Building 1-54
Precision Specialty Metals
Produces Flattest Stainless Steel 1-55
Specialty Steel Industry of North America 1-34
Washington Steel
Introduces Dual-Phase Alloy 1-66

SUPERALLOYS
Bolting Alloy Fills High-Temperature Gap 2-33
Inco Designs Corrosion-Resistant Superalloy 1-53
Nickel-Base Alloys Combat Corrosion 6-25
Single-Crystal Superalloy
Drives Turbine Advances 4-39
Special Metals Manufactures
Large-Diameter Reforging Billet 1-64
Specialty Steel Industry of North America 1-34
Teledyne Allvac Spray Forms
Clean Superalloys 1-65

SURFACE ENGINEERING
Centrifugal-Shear Carbon Dioxide Cleaning 5-35
Ion Beams Replace Chrome Plating 5-29
Surface Modification 1-29

TESTING/CHARACTERIZATION
Analytical Electron Microscopy
Wins 1994 Jacquet-Lucas Award 2-28
ASM/IMS Photomicrography Competition 2-30
Inside an Aerospace Testing Facility 2-23

TITANIUM ALLOYS
Alloys for Aerospace 4-23

WELDING
Explosive Welding:
Principles and Potentials 3-37
The History of Arc Welding 3-33
Plenty to See and Learn
at AWS Welding Expo '95 3-21
Welding Processes for Plastics 3-27

AUTHOR INDEX

Agarwal, D.C. 6-25
Bodeen, George H. 1-32C
Brasher, David G. 3-37
Busch, John 1-25
Butler, Donald J. 3-37
Buzolits, Steven R. 2-33
Covino, B.S., Jr. 2-28
Cramer, S.D. 2-28
De Bruyne, Roger 6-33
Deevi, S.C. 6-29
Delagi, Richard G. 1-27
Dunning, J.S. 2-28
Esaki, S. 5-37
Fabian, Roger J. 5-40C
Grady, Gerald R. 2-23
Green, J.A.S. 4-35
Grimm, Robert A. 3-27
Harris, Ken 4-39
Henry, Richard J. 1-23
Herda, W. 6-25
Hochman, Robert F. 1-29
Hunt, Margaret W. 1-2, 2-2, 3-2, 4-4, 5-2, 6-2
Jackson, David P. 5-35
Jha, Sunil 1-27
Kline, Lawrence A. 2-33
Kramer, L.D. 4-35
Krauss, George 5-40Y
Krumholz, Phillip L. 6-39
Kuhn, Howard A. 1-23
Kumar, K.S. 4-35
Kunish, Randy L. 2-23
Larsen, D.E., Jr. 4-35
Lazear, N.R. 2-43
Lorents, Donald C. 4-29
Malhotra, Ripudaman 4-29
Matsumiya, Tooru 2-51
Maus, Stephen A. 5-40CC
McLean, A. 4-43
Messler, Robert W., Jr. 2-47
Motoyasu, G. 4-43
Nogami, Atsushi 2-51
Norris, L. Fredrick 2-23
Ohno, A. 4-43
Perry, Anthony J. 5-29
Ramsay, Christopher 3-40GG
Ruoff, Rodney S. 4-29
Sawada, Hideaki 2-51
Sikka, V.K. 6-29
Simmons, J.W. 2-28
Slater, H.R. 1-19
Soda, H. 4-43
Stinner, Robert J. 5-29
Sullivan, John L. 2-37
Sundberg, Rolf 5-33
Thomas, Colin R. 2-23
Totten, George E. 3-40C
Treglio, James R. 5-29
Troxell, Jack 6-35
Tuominen, Steve 4-23
Vought, J.D 6-29
Walton, Harry 3-40AA
Wojcik, Craig 4-23
Young, Steven B. 2-37

ADVANCED MATERIALS & PROCESSES®

Published by ASM International
Materials Park, Ohio 44073-0002

Patricia E. Brooks
Publisher

Faye D. Balser
Editorial Coordinator

ADVERTISING OFFICES

New York City/New Jersey/
New England/Delaware/
Washington,D.C./Maryland/
Southeast/Southwest/Europe
Robert T. Marchant
P.O. Box 514
Old Saybrook, CT 06475
Tel: 203/388-4014
Fax: 203/388-6542

Ohio/New York State/Pennsylvania/
West Virginia/
Kentucky/Tennessee/Canada
Vin LeGendre
P. O. Box 2114
Andover, MA 01810
Tel: 508/470-3331
Fax: 508/475-3398

Illinois/Minnesota/Wisconsin/
Missouri/Indiana/
Kansas/Iowa/Michigan
John P. Banaski
P. O. Box 687
St. Charles, IL 60174
Tel: 708/377-3311
Fax: 708/377-3311

Western U.S./Japan/Far East
Paul Conser
Paul Conser Associates
15720 Ventura Blvd., Suite 610
Encino, CA 91436
Tel: 818/501-4777
Fax: 818/906-2109

BPA

Reprints: copies of *Advanced Materials & Processes* articles are available as reprints. For a quotation, contact the Editorial Coordinator. *Advanced Materials & Processes* is available on microfilm/microfiche from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106.

ASM International is not responsible for statements or opinions in this magazine.